



Harold Fern Foundation Quarterly

Winter 2007

THE HARDY FERN FOUNDATION

P.O. Box 3797

Federal Way, WA 98063-3797

Web site: www.hardyferns.org

The Hardy Fern Foundation was founded in 1989 to establish a comprehensive collection of the world's hardy ferns for display, testing, evaluation, public education and introduction to the gardening and horticultural community. Many rare and unusual species, hybrids and varieties are being propagated from spores and tested in selected environments for their different degrees of hardiness and ornamental garden value.

The primary fern display and test garden is located at, and in conjunction with, The Rhododendron Species Botanical Garden at the Weyerhaeuser Corporate Headquarters, in Federal Way, Washington.

Satellite fern gardens are at the Stephen Austin Arboretum, Nacogdoches, Texas, Birmingham Botanical Gardens, Birmingham, Alabama, California State University at Sacramento, Sacramento, California, Coastal Maine Botanical Garden, Boothbay, Maine, Dallas Arboretum, Dallas, Texas, Denver Botanic Gardens, Denver, Colorado, Georgeson Botanical Garden, University of Alaska, Fairbanks, Alaska, Harry P. Leu Garden, Orlando, Florida, Inniswood Metro Gardens, Columbus, Ohio, New York Botanical Garden, Bronx, New York, and Strybing Arboretum, San Francisco, California.

The fern display gardens are at Bainbridge Island Library, Bainbridge Island, WA, Lakewold, Tacoma, Washington, Les Jardins de Metis, Quebec, Canada, Rotary Gardens, Janesville, WI, University of Northern Colorado, Greeley, Colorado, and Whitehall Historic Home and Garden, Louisville, KY.

Hardy Fern Foundation members participate in a spore exchange, receive a quarterly newsletter and have first access to ferns as they are ready for distribution.

Cover Design by Willanna Bradner

HARDY FERN FOUNDATION QUARTERLY

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QUARTERLY

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The Spore Exchange Needs You!

Please send your spores to our Spore Exchange Director:

Katie Burki
501 S. 54th St.
Tacoma, WA 98408

President's Message

Now that winter is firmly entrenched, I do not feel guilty about taking some time to be an armchair gardener. It's time to read the several garden books purchased last year that seemed essential at the moment, but are now begging to be read. If your book lust has not been satisfied take time to read the book review in this issue. I am a particular fan of George Schenk's "Gardening on Pavement, Tables, and Hard Surfaces" and look forward to reading the review.

This is the season for a flood of new plant catalogs and price lists. Remember to take a look at the HFF spore exchange. It is a great way to acquire some choice additions. Do not wait too long as the best spore always goes fast.

A special thank you to our past president John van den Meerendonk and to the Pendleton and Elisabeth Carey Miller Charitable Trust. John wrote a grant for funding the building of a new structure to house our plants at the Rhododendron Species Botanical Garden and the Miller Charitable Trust has given a \$5,000 grant to the HFF for this project. Once built it will more than double our nursery space. We hope that this will allow us to offer a wider choice of rare and new ferns to our members and supply our satellite gardens with a broader range of ferns to trial.

If you are planning your travels this year consider the joint HFF and BPS trip to Texas in the fall. Board member at large Naud Burnett has developed a full schedule to see the best of Texas ferns. For a look at the itinerary see the write up in the fall issue of the quarterly and the synopsis in this issue. If you are interested sign up now to make sure you receive the details later. It looks like it will be a fantastic trip. More passive travelers can enjoy the final installment of the HFF/BPS Germany fern trip (the first installment was in the fall 2006 quarterly)

The final note is for those in the Seattle area February 14-18th for the Northwest Flower and Garden Show. Look for the HFF booth. If you are interested in volunteering to man our booth call Michelle Bundy at (253)838-4646 or email her at rsf@rhodygarden.org. Anyone who cannot get enough fern viewing by walking through the show is welcome to come to my lecture on Friday February 15th at 5:30 on "Beyond the Sword Fern". Be sure to stop by and introduce yourself.

All the best,

Richie Steffen

Dryopteris lacera

James Horrocks - Salt Lake City

The species name “lacera” comes from ‘lacerate’ which means “irregularly cut, as if torn”. This may allude to the rather coarse look of the pinnules which can give the impression of being somewhat uneven. It may also refer to the deciduous fertile portion of the frond which withers after the spores are shed. Hence, this species seems to have a slightly coarser appearance than some of its more petite relatives.

D. lacera is native to Japan, Korea, and Manchuria and is found growing on exposed hillsides adjacent to mountain streams and in moist wooded areas. It is very cold-hardy. In *Flora of Japan*, the fronds are said to be evergreen, excluding the deciduous fertile portion. Hoshizaki, however, lists it as deciduous. Perhaps we can reach a happy medium by referring to Mickel who states that the fronds are semi-evergreen. The one notable distinguishing feature of this species among all the dryopteris is the curious contracted pinnae of the upper 1/4 to 1/3 portion of the frond. This is paralleled in nature with *Polystichum acrostichoides*, the Christmas fern, which also has contracted fertile pinnae on the upper portion. *D. lacera* is not likely to be confused with other species of *Dryopteris*, with the possible exception of *D. sublacera*.

However, in *D. lacera*, the pinnules come to a blunt point whereas in *D. sublacera*, they are rounded. Also, *D. sublacera* does not have the contracted fertile pinnae. One other species from China, *D. neolacera*, is similar but with less contracted fertile pinnae. A final note: *D. lacera* has produced four hybrids in Japan. Interestingly, a supposed variety of *D. lacera*, var. *intermedia*, has now been recognized as a hybrid between *D. lacera* and *D. uniformis*.

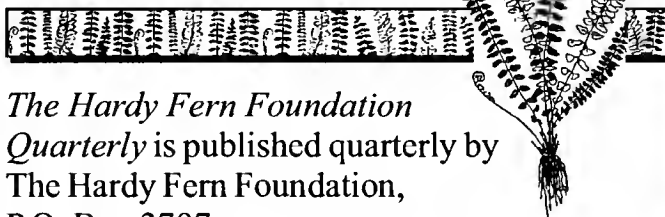
Description: The rhizome is ascending to erect, forming a distinct short crown. The “semi-evergreen” fronds are lance-shaped to triangular, one to two feet long and 6 to 10 inches wide. The fronds are thickly herbaceous to subcoriaceous, that is, somewhat leathery. The stipes are short and tufted, pale brown, and prominently scaly, the scales rust-



Dryopteris lacera.

Photo by Richard Young - Salt Lake City

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Federal Way, WA 98036-3797

Articles, photos, fern and gardening questions,
letters to the editor, and other contributions are
welcomed!

Please send your submissions to:

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2003 128th Ave SE,
Bellevue, WA, 98005

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Assistants: Michelle Bundy
Jo Laskowski

Graphics: Willanna Bradner (cover design)
Karie Hess (inside design)

Continued on page 4

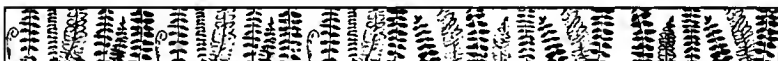
***Dryopteris lacera* - continued**

colored to dark brown. The basal scales are broadly ovate while those above are thin linear-lanceolate to narrowly ovate and sub entire. The "apple-green" fronds are bipinnatifid to somewhat bipinnate. The rachis exhibits linear to lanceolate scales. The sterile pinnae are pinnate at the base, pinnatifid at the tip, and are oblong-lanceolate, acuminate, with short petioles. They are oblique and whitish beneath, almost hairless on both sides. The sterile pinnules are broadly lanceolate, acute to sub-acuminate, more or less falcate, and crenately toothed. The fertile pinnules are contracted and the sori appear on the upper 1/4 to 1/3 of the frond. After the spores are shed, the fertile pinnae wither and are quite deciduous. The indusia are orbicular-reniform and entire.

Culture: *D. lacera* is an interesting subject for the woodland garden. It is quite easy to grow if given moderate light. It should be planted where it can be contrasted with more delicate species. It is said to prefer a somewhat acid soil and is easily grown from spore. The distinctive fronds, which can reach two feet, arch gracefully. The only detracting feature is the fertile pinnae, which when withered, gives the frond an incomplete, if not injured look. If this can be accepted as a "curiosity", then it certainly has a place in the garden.

References:

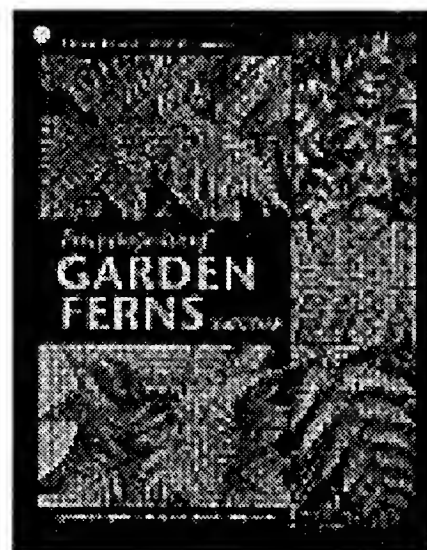
- Flora of Japan*, (1965) Jisaburo Ohwi, Smithsonian Institution, Washington D.C.
A Guide to Hardy Ferns, (1984) Richard Rush, British Pteridological Society, London
Fern Grower's Manual, (Revised - 2001) Barbara Joe Hoshizaki and Robbin C. Moran, Timber Press, Portland
Ferns For American Gardens, (1994) John Mickel, Macmillan Publishing Co. New York
The Plantfinder's Guide to Garden Ferns, (2000) Martin Rickard, Timber Press, Portland



NEW MEMBERS

Meredith Azark
Phillip Ball
Eleanor Close
Martha S. Fulton
Doris Grote
Richard Harrison
Joe Havlovic
Laura Joseph
Marie LaRiviere
S.W. Lohwater
Andrew McCune
Harold Peachy

***Coming soon from
Timber Press . . .***



***Encyclopedia of Garden Ferns*
by Sue Olsen**

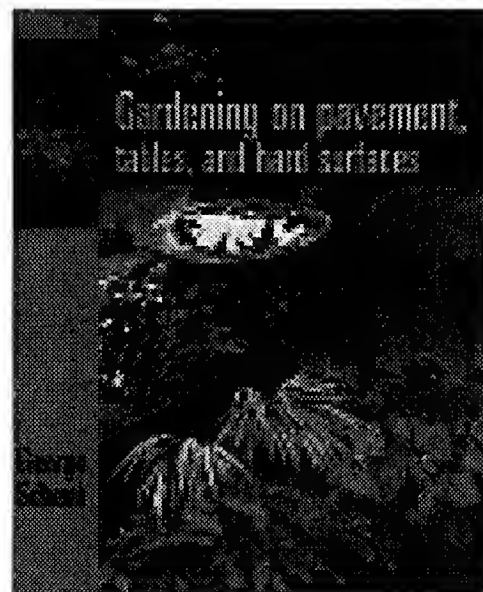
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BOOK REVIEW

Joyce Descloux - Ocala, Florida

Gardening on Pavement, Tables, and Hard Surfaces by George Schenk.

Published August 2006 in paperback
by Timber Press. Portland \$19.95



This is a gem of a how-to manual for any gardener looking for inspiration and ideas for planting in and on areas not usually thought of as being cultivated, and also for the display of plants in new and intriguing ways.

For the fern enthusiast it is pure delight to find page after page of illustrations of plantings using many types of ferns. A whole chapter is devoted to creating “fern tables,” an innovative way to garden, which the author has developed, that was new to me.

What caught my eye, though, as I leafed through the fall Timber Press catalog, were the words “Gardening on Pavement” above an enticing illustration of succulents and moss growing on a slab of rock. At my winter home in Florida I have a concrete patio behind the house, unused for living space, where I had clustered pots of aloes and succulents in an attempt to soften the harsh surface. These soon outgrew their containers and sprawled on the slab in a charming but also improvised manner that was not entirely pleasing. Now, after reading the chapter on Pavement Gardening, I know how to make a proper garden there by completely covering the concrete with a more appropriate planting.

Other chapters are devoted to gardening on rocks and rails, and on stumps and logs. The author makes it easy to emulate any of the gardens and plantings he shows by giving explicit instructions on materials needed, lists of plant substitutions, and also, important aging aspects of various projects. Some, such as gardens featuring bonsai, can take months or years to develop; yet other plantings can be constructed in a week or a day, even minutes in the case of smaller arrangements for hand held containers.

To my mind, however, it is the chapter on table-top gardens that truly brings gardening to “a higher plane,” literally. He shows how on tables, slate slabs, tree stumps, bird baths, and trays, gardeners- even those with limited physical agility, as well as children, can indulge their horticultural urges, and bring gardening art to the smallest space.

Most gardeners know the author from his books: *The Complete Shade Gardener*, and *Moss Gardening*. Both have been cited as outstanding contributions to the gardening literature. George Schenk has worked in horticulture his entire life, and his knowledge of plants is vast. His innovative and beautiful planting designs distinguish him as a true artist-craftsman as well. This is gardening in its highest form, for he is a master of it.

In this new book, using a more varied plant material, he invites the reader to explore with him the delights and satisfaction found in making novel gardens in challenging situations, citing as one inspiration the fabled Hanging Gardens of Babylon. Thus, the fern table. It is easy to see he values ferns; he uses them everywhere. “With their winged and feathery forms,” he says, “ferns are uplifting.” I agree. This book is uplifting, too. It speaks to the soul of a gardener as not many have.

Hardy Fern Foundation Spore Exchange List 2006-2007

To Order: Please print your selections in alphabetical order. Include 50 cents for each fern requested, postage (Check made payable to Hardy Fern Foundation) and a self addressed bubble envelope (please do not attach the postage to the envelope). If you are ordering more than a half dozen packages, please send additional postage up to one dollar's worth. There are no additional charges applied to overseas members, but please enclose an international postage coupon (2 for large orders) and an envelope. Please list a first and second choice. Some items are limited, so order early for best selection. If both choices are unavailable, would you like to donate the additional money to the foundation, or hold it for another order? If neither is indicated, we will consider it a donation to our endowment fund. At this time orders are not taken from the internet, so please follow instructions above. Orders will be sent within a month of post mark date.

Your fresh spores are always appreciated!!! (Please package with collector's last name and year collected on package - individually packaged spore is much appreciated)

Mail requests to:

Katie Burki
HFF Spore Director
501 South 54th Street
Tacoma, WA 98408

Genus species	var. or cv.	Year	Donor(s)
Adiantum aleuticum	'Subpumilum'	'04	Duryee, RSF
Adiantum pedatum		'02, '06	Hill, Briegel
Asplenium trichomanes		'01	Duryee
Asplenium fissum		'06	Gassner
Athyrium filix-femina		'05	Burka, Schmidt, Briegel
Athyrium filix-femina	'Bornholmiense'	'06	Duryee
Athyrium filix-femina	ssp. cyclosorum	'06	Gassner
Athyrium niponicum		'03, '05	Burka, Briegel
Athyrium otophorum		'01	RSF
Athyrium pycnocarpon		'02	Briegel
Athyrium thelypteroides		'05	Briegel
Blechnum chilense		'04	RSF
Blechnum penna-marina		'03	Duryee
Blechnum penna-marina	'Cristata'	'03	Duryee

Blechnum spicant	'06	Hill
Blechnum spicant 'Crispum'	'03	Olsen
Blechnum spicant 'Rickard's Serrate'	'03, '05, '06	Gassner, Duryee, RSF
Botrychium dissectum	'05	Briegel, Schmidt
Botrychium virginianum	'02, '05	Briegel
Cryptogramma acrostichoides	'04, '05, '06	Gassner, Duryee, Hill
Cyathea cooperi	'05, '06	Hill
Cyrtomium falcatum	'03, '04	Briegel, Wingard
Cyrtomium macrophyllum	'01	RSF
Dennstaedtia punctilobula	'03	Briegel
Doodia australis (syn. media)	'04, '06	Duryee, RSF
Dryopteris affinis form	'05	Horder
Dryopteris ardechensis	'06	Gassner
Dryopteris arguta	'03	Olsen
Dryopteris bissetiana	'03	RSF
Dryopteris celsa	'00, '03	RSF, Briegel
Dryopteris championii	'03	RSF
Dryopteris corleyi	'03	RSF
Dryopteris crispifolia	'06	Olsen
Dryopteris cycadina	'05	Hill
Dryopteris cystolepidota	'00, '03	RSF
Dryopteris dilatata 'Jimmy Dyce'	'99	Duryee
Dryopteris erythrosora	'00, '03	RSF, Hay
Dryopteris erythrosora	'04	Wingard
Dryopteris filix-mas 'Linearis Polydactyla'	'99, '00	Olsen, Briegel
Dryopteris formosana	'03	RSF
Dryopteris fragrans	'06	Gassner
Dryopteris lepidopoda	'03, '05	Hill, RSF
Dryopteris ludoviciana	'02, '03, '06	RSF, Hay
Dryopteris marginalis	'03	Hay, Briegel
Dryopteris namegatae	'05	RSF, Olsen

Continued on page 8

Spore Exchange - *continued*

<i>Dryopteris pycnopteroides</i>	'03-4	RSF, Gassner
<i>Dryopteris ramose</i>	'04	Gassner
<i>Dryopteris remota</i>	'00	RSF
<i>Dryopteris sacrosancta</i>	'00	McGill
<i>Dryopteris scottii</i>	'03	RSF
<i>Dryopteris sieboldii</i>	'01, '05	Hill
<i>Dryopteris spinulosa</i>	'03	Briegel
<i>Dryopteris stenolepis</i>	'05	Olsen
<i>Dryopteris sublacera</i>	'05, '04	RSF, Gassner
<i>Dryopteris villarii</i>	'06	Gassner
<i>Dryopteris wallichiana</i>	'01	RSF
<i>Gymnocarpium oyamense</i>	'03, '06	Gassner, Duryee
<i>Llavea cordifolia</i>	'03	Swartz
<i>Lygodium scandens</i>	'03	Briegel
<i>Matteuccia orientalis</i>	'05, '06	Limberger, RSF
<i>Matteuccia struthiopteris</i>	'03	Briegel
<i>Nephrolepis exaltata</i>	'03	Briegel
<i>Onoclea sensibilis</i>	'03	Briegel
<i>Pellaea cordifolia</i>	'00	Swartz
<i>Pellaea rotundifolia</i>	'05	Limberger
<i>Phyllitis scolopendrium</i>	'01	RSF
<i>Phyllitis scolopendrium</i> 'Digitata'	'01	Mandeville
<i>Polypodium glycyrrhiza</i>	'03	RSF
<i>Polypodium hirsutissimum</i>	'05	Limberger
<i>Polypodium polypodioides</i>	'03	Briegel
<i>Polypodium scolieri</i>	'01	RSF
<i>Polystichum acrostichoides</i>	'03	Briegel
<i>Polystichum aculeatum</i>	04, '05	RSF, Gassner
<i>Polystichum x bicknellii</i>	'06	Gassner
<i>Polystichum californicum</i>	'05	RSF
<i>Polystichum lobatum</i>	?	Gassner

Polystichum luctuosum	'03	RSF
Polystichum makinoi	'05	RSF
Polystichum mayebarae	'03, '05	Olsen
Polystichum munitum	'01	Taylor
Polystichum retrosopaleaceum	'04, '06	Gassner, RSF
Polystichum setiferum 'Pulcherrimum'	'03	Duryee
Polystichum setiferum	'00	RSF
Polystichum tsus-simense	'03, '05	Duryee, Hill
Polystichum vestitum	'06	Gassner
Polystichum xiphophyllum	'04, '05	RSF, Duryee
Pteris vittata	'03	Briegel
Thelypteris palustris	'03	Briegel
Thelypteris patens	'03	Briegel
Woodsia intermedia	'05	RSF
Woodwardia areolata	'03	Briegel
Woodwardia fimbriata	'02	Mandeville
Woodwardia virginica	'03, '05	Briegel

Donors

From

Kevin Briegel	Ohio
Imre Burka	Hungary
Helen R. Choyke	Pennsylvania
Sylvia Duryee	Washington
Wolfram Gassner	Germany
Terry Hay	Alabama
Arlen Hill	Washington
Jocelyn Horder	Washington
Wilfried Limberger	Austria
Sue Mandeville	Oregon
Peggy McGill	Alabama
Sue Olsen	Washington
Rhododendron Species Foundation (RSF)	Washington
David Swartz	California
Zdenek Seibert	Czech Republic
Jeanie Taylor	Washington
Amy Schmidt	Wisconsin
Christian Wingard	Louisiana

HFF/BPS Gems of Germany Tour - Part II

Day 6, 5th July – Elbsandsteingebirge, Polenztal & Dresden

Pat Riehl

Today we drive to Elbsandsteingebirge for a trek in the woods. We are about 10 kilometers from the Czech border. Our goal is to see the prothalli of *Trichomanes speciosum*. I am told this area has the most fern species in Germany, many not found in other parts of the country. Our guide is Stefan Jessen.

Still in the bus parking area we find *Equisetum arvense*. The woods are a mixture of oak, beech, birch and Scots pine. Our first fern sighting is *Oreopteris limbosperma* and near it is *Phegopteris connectilis* mixed with blackberry. It is quite shady with filtered sunlight. We are walking up a gully climbing over fallen trees and crossing a narrow stream. We start seeing a lot of *Dryopteris dilatata*. This fern is the most common in Germany. As we move up this gully several people break away and explore the upper sides of the slope. There is a discussion about *Dryopteris dilatata* and *Dryopteris expansa* colour, length of pinnule, scales and sori.

We next see *Gymnocarpium dryopteris* growing among grasses with *Athyrium filix-femina*, blackberry and *Dryopteris dilatata*. Nearby is *Blechnum spicant* and a *Matteuccia* species thought not to be native to this area.

The soil has changed from limestone to sandstone. It is warmer and the forest has filled in with more conifers. We are in an area with sheer cliff walls but with pockets of open areas. It is in one of these open areas that we get to see the *Trichomanes speciosum* gametophytes. How Stefan found this is a total puzzle to me. One can only see these by standing on a rock and peering into a rock wall crevice with a flashlight. Amazing.

Along the way there has been talk of seeing *Hymenophyllum tunbrigense*. We stop at one location where it was sited long ago. Now it is only moss. High on a cliff is *Polypodium vulgare*. We continue to see *Dryopteris dilatata* and *Dryopteris expansa* and their offspring *Dryopteris x ambroseae*.

After climbing a very steep path we had lunch in a sea of *Equisetum sylvaticum*. It was beautiful. We are heading back to the bus but along the way pass patches of *Blechnum spicant*.

As we get to the bus it is discovered that we are missing two of our group. So while a search is made some of us walk a short distance to a fortress bridge. It is a major attraction in the area. A man-made stone and mortar bridge built on the side of a cliff. The vistas are beautiful. We saw lots of *Asplenium trichomanes* and polypodiums growing in the mortar and rocks.

Our wayward members are found and we make our way to the second stop, Polenztal. We do two short walks here. The first is to the Riesengrund. We see *Dryopteris affinis* ssp. *borreri* and *Athyrium filix-femina*. The second walk is down a road, climbing a slope along side the road. Suddenly here are *Asplenium trichomanes* ssp. *pachyrachis* and *Asplenium trichomanes* ssp. *quadrivalens*. *Asplenium trichomanes* ssp. *pachyrachis* is growing in niches of this soft rock flattened against the wall like starfish. As we walk back to the bus there is *Cystopteris fragilis* growing along side the road.

After a long day of ferns, it is back to the bus and an hour's ride to Dresden and our hotel. After a short rest some of us are off to Dresden for a guided tour and a stop somewhere for dinner.

Day 7, 6th July - Weinböhla & Prietitz

Bridget Laue

From Dresden we drove through lovely countryside, and past the beautiful 16th century castle of Moritzburg, to Weinböhla and Herr Foerster's garden. The garden was slightly acid with underlying sandstone to which he had added thick layers of mulch. This was a 'collector's garden', which included rare hybrids from many parts of the world – Europe, North America, Japan, Taiwan, Korea, China, and the Himalayas.

The well-labelled collections were organized into individual beds; species with their hybrids and cultivars. Some of the hybrids had occurred in this site, while others were obtained from the collections of the Botanical Gardens of Berlin and Oxford, and some from Martin Rickard. Many were inherited from Herr Foerster's mentor Tadeus Reichstein, a Swiss scientist awarded the 1950 Nobel Prize in Medicine, who used his prize money to fund research in fern hybridisation, particularly with *Asplenium* species.

The collection included approximately 30 cultivars of *Polystichum setiferum*, 30 other species of *Polystichum*, 12 species and cultivars of *Athyrium*, 12 cultivars of *Asplenium scolopendrium*, 30 cultivars of *Dryopteris affinis*, and 15 of *Dryopteris filix-mas*. Other particularly interesting specimens included *Dryopteris marginalis*, *Athyrium otophorum* v. *okanum*, *Athyrium niponicum* 'Grune form', *Dryopteris pycnopteroides*, *Athyrium iseanum*, *Polystichum acrostichoides* x *setiferum*, and *Polystichum* x *meyeri*.

Christian and Margit Kohout's garden in Prietitz was truly amazing. With over 700 different ferns, it contains probably the largest collection of hardy ferns in Europe, if not the world. As well as being a keen fern enthusiast, Herr Kohout is a professional landscaper. Over the years, he has transformed the 2500 m² of solid clay soil into a cleverly contoured fern paradise accessed by winding stone paths. Great care has been taken to create appropriate conditions for each type of fern, while maintaining the aesthetic beauty of the garden. Some very large, unusual conifers, bamboos and shrubs provided the shade and background for the ferns.

Different areas displayed groupings of species of athyriums, polystichums, polypods, woodsias, cystopteris and aspleniums.

Among the numerous interesting and unusual ferns some that stood out were *Onychium japonicum* and *O. tenuifrons*, *Dryopteris expansa* 'Willeana' from Norway, *D. scottii*, *Polystichum multifidum* from Chile, a cross between *P. scopulinum* and *P. munitum*, *P. stenophyllum*, *P. acrostichoides*, *Coniogramme* spec., and *O. regalis* 'Decompositum', *Gymnocarpium jessoense* and *G. fedtschenkoanum*, *Polypodium scolopendrii*, *Microlepia sino-strigosa* from China, *Asplenium adulterinum*, *Parathelypteris beddomei*, *Dennstaedtia wilfordii*, *Woodsia fragilis*, *W. polystichoides* 'Kamchatka', and many more

Continued on page 12

HFF/BPS Gems of Germany Tour - *Part II continued*

That day it was 32°C in the shade! But our hosts took good care of us by providing a spread of hot and cold drinks, sandwiches, pastries and a special cake for Pat Acock!

At the end of the visit, Herr Kohout took a few of us to see a nearby active kaolin clay pit, typical of those supplying the famous Dresden china. A meadow of *Pilularia globulifera* grew where water stood in the exhausted pans.

It was a short drive to the picturesque small town of Kamenz, where our charming hotel stood in the main square opposite the Rathaus.

Day 8, 7th July – Zöblitz

Richie Stefan

The destination of today was the serpentine area outside of the small town of Zöblitz. After being stalled in construction traffic near the town we arrived behind schedule. Once we arrived the group split into two some staying to see the sites in town the rest heading for a day in the serpentine areas on the outskirts. The serpentine stone has been mined in this region for hundreds of years because of its beautiful coloring and its easy workability. Unfortunately, due to the destructive nature of stone removal the unique plant life has suffered from these practices. In 1996 our tour guide, Steffen Jessen, and some of his colleagues started a project to protect and enhance the rare fern populations in serpentine areas in Saxony.

It was the day to see rare aspleniums. The first stop was an area developed by the project. It consisted of mining tailings piled up and planted with *Asplenium cuneifolium*, *Asplenium adulterinum*, and the very rare hybrid between *A. adulterinum* and *A. viride*, *Asplenium x poscharskyanum*. *A. x poscharskyanum* was represented by a single clone found at this site and had been divided and re-established in the area. Throughout the area were scattered individuals of *Asplenium cuneifolium* and *Asplenium adulterinum* that have started to repopulate the area.

A short walk from the mound was a small ravine with an outcropping of stone at the end. We scrambled down the ravine to look at the only existing colony of *Asplenium viride* growing at this location. The grassy sides of the ravine were shaded with birch and mountain ash and held a few patches of *Athyrium filix-femina*, *Dryopteris dilatata* and *Dryopteris filix-mas*. We stopped for a quick lunch then continued on to the last location near the quarry. This location was a relatively new pile of mining tailings and was very coarse and rocky. New plantings had recently been established with research ongoing to improve the growing conditions in this site. Most of what was being established was *Asplenium cuneifolium*. Nearby, not intentionally established, was a quickly spreading colony of *Equisetum arvense*. We all hope this will not be the only fern to thrive in this area.

After a short hike past a nearby village we reached the final destination for the day, an old mining site that contained a deep pond surrounded by light woodlands and open meadows. In an aspen grove among grass and tall sparse wildflowers we found a few patches of the unusual *Ophioglossum vulgatum*. Mostly sterile fronds were present with the odd fertile

frond. Beside the aspen trees was a small hill. On a cleared grassy north facing slope a short distance away Mr. Jessen pointed out a few isolated individuals of *Botrychium lunaria* and a slowly spreading patch of *Gymnocarpium dryopteris* tucked among heather, *Vaccinium vitis-idaea*, and scattered groups of *Huperzia selago*. It was a good finish to the unusual flora of the serpentine site.

Addenda by Berndt Peters –That evening at our hotel in Chemnitz we had a delicious buffet dinner. After this Richie Steffen showed slides of the beautiful flora and especially ferns of Chile. He took these photographs during a visit in Chile 2005 and after seeing his slides all of the participants wished to visit Chile also for a fern trip.

As the ferny finish of this day Sue Olsen presented some slides of especially rare and beautiful ferns. These were taken in her garden and during visits in other fern gardens. Richie and Sue got thankful applause from the audience for their contribution for that day.

Day 9, 8th July - Chemnitz, Arktisch-Alpiner-Garten



Photo by Stefan Jessen.

Tom Stuart

Today we get to see Stefan Jessen in his role as curator of the Arctic Alpine Garden, an undertaking of the Walter-Meusel Trust. Meusel was a lyricist and writer by profession, a lover of hardy rock plants by avocation. Among his books are those on *Equisetum*, the lycopods, and hardy rock plants. This garden in suburban Chemnitz was begun in 1956 and became public at Meusel's death in 1990. The trust maintains the garden and sponsors projects on propagation of endangered species and re-establishing them in the wild, one of them being the aforementioned *Asplenium* on serpentine.

HFF/BPS Gems of Germany Tour - *Part II continued*

As this was one of the few gardens where plants were on sale, our arrival was immediately followed by a stampede. Inspect the catalog at <http://www.arktisch-alpiner-garten.de/>

If you can deal with the import regulations, this amazing array of plants could be reason enough to smash the piggy bank. Moreover, quite a few offerings were not in the catalog.

Less than an acre (2800 m²) and with 6000 alpine taxa, this garden set no tour record for a pteridophyte checklist, but it was world class nonetheless. Particularly strong collections both in the garden and in the sale offerings were among the *Saxifraga*, *Cassiope*, *Empetrum*, *Gaultheria*, *Salix*, and dwarf rhododendrons.

Another aspect deserves particular note. We have all seen botanical gardens lay out beds devoted to continents. Here the concept was expanded with two dozen or more mountain ranges as targets. Moreover, within these targets—Caucasus, Pyrenees, Himalayas, South-western Alps, etc.—plants were assigned also to their appropriate ecological habitats. What an undertaking! Huzzahs to Herr Jessen.

North America did get short shrift among the beds, fine clumps of *Cheilanthes fendleri* and *Cryptogramma acrostichoides* notwithstanding, but a handsome one was New Zealand's with *Blechnum minus* (fronds elliptic, pinnate), *Polystichum vestitum* (with shiny scales and lamina 2-pinnate) and *Hypolepis millefolium* (the specific name tells it all). What you don't often see in gardens are the lycopods for the very good reason many have fungal associations or strict cultural requirements. Here on the sale tables was *Huperzia selago* (I missed it in the garden) and in the German Middle Mountains bed the circumpolar *Lycopodium annotinum*, running amuck.

In a propagation house all heads were turned by a sturdy, pinnatifid *Asplenium* hybrid, *A. scolopendrium* x *A. trichomanes* ssp. *hastatum*, recently discovered in the Italian Alps, as yet unnamed and undescribed. Imagine, if you will, a frond half-way between *scolopendrium* and *trichomanes*: you've got the picture.

Take the family. A secondary interest of Meusel was amphibians, so there's a crocodile and snakes to keep the kids happy while you run amuck.

Day 10, 9th July – Bendorf, Altena and Köln

Judith Jones

We boarded the bus and headed for Dirk Wiederstein's fern nursery a short ride away in Bendorf. Our appetites for acquiring a few of the treasures so wonderfully displayed in the gardens we visited had been whetted but not totally satisfied by our buying frenzy at Stefan Jessen's remarkable alpine display garden and nursery the day before. We were briefly halted for an introduction before the buying frenzy began in earnest.

The temperate ferns were neatly laid out in flats on the ground in two small greenhouses. Naud Burnett of Casa Flora was particularly pleased to see many ferns produced by his nursery making a nice showing in the sales area. There were also a small number of tropical ferns for sale as well as some larger specimens of tree ferns and tropical ferns.

The nursery has a small display garden nearby with some very fine specimen stock plants. One *Polystichum setiferum* cultivar that caused quite a bit of excitement and exuberant discussion was 'Wollastonii' which was reported to be from the original plant. Martin Rickard thought the original in the Jones' Nature Prints shows a wider base and slightly more depauperate pinnules. There were also some quite fine forms of the *Polystichum setiferum* group Jimmy Dyce called 'Plumoso-multilobum', as well as a fine sample of *P. s. 'Divisilobum Iveryanum'* and *Dryopteris filix-mas 'Grandiceps Askew'*.

Back on the bus we settled in for a two and a half hour ride to Altena for our last visit to see the fern garden of Rolf Thiemann. The town of Altena nestles on the sides of a very steep valley. Perched on the rim of the valley is a massive stone castle that we were told was the first youth hostel in the world. For those who have seen the Desi Arnez/Lucille Ball movie classic "The Long Trailer" you have an idea of what the narrow winding roads around the town felt like to those of us on this enormous bus. Once we were safely down at the bottom of the valley we headed up the other side only to find that we seemed to be lost. After several trips up, down, and turning around our intrepid guide Berndt directed our unflappable bus driver Berndt up the proper street to a soccer field.

From there we had to tromp down a wooded hillside to the Thiemann's house and gardens. Once we arrived we could see why the bus could not deliver us closer to their door. They live in a Rapunzel style house with their kitchen and living room up three flights of stairs from the rear patio.

This garden was a magical place to end our tour. The garden begins with a stone patio, rock walls, and knee level planting beds which descend down to a level area with a charming entertainment cottage overlooking a grassy area around a waterfall and pond. The cottage was all set up for us to enjoy our lunch. We did pile in rather fast as a rainstorm moved through. Mrs. Thiemann had prepared plate after plate of delectable goodies and hot and cold drinks to go with our lunch. Who wanted the hotel lunch with such largesse before us! But cozy as the cottage was once the goodies were depleted we couldn't wait to see what was in the raised bed next to the cottage and planted up the steep hillside behind it. After one last go at pelting us with rain the sun appeared and made photography a bit of a challenge.

The fern collection was very well displayed throughout this garden with some very clever gardening ideas to try at home. I particularly thought that the small pre-formed pools built into the retaining wall rock garden beds were a stroke of genius. As you descended the hillside these pools were raised for a close-up perusal of the miniature water plants, surrounding small ferns and other choice companion plants.

The fern list for this garden has 258 entries. A collection of *Polystichum* hybrids was displayed on a terraced hillside behind the cottage flanked by a vertical stonewall that hosted *Asplenium* species and hybrids. In front of this wall was a nearly waist high-raised bed combining sun loving alpinines with several *Woodsia* species.

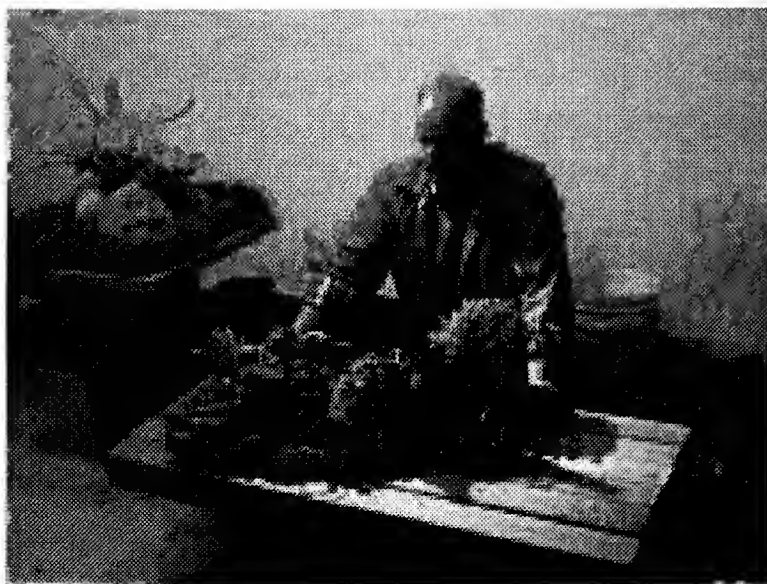
There was a stunning specimen of *P. munitum* x *P. andersonii* arching out magnificently from the rock wall just as you descend to the lower garden. It is truly amazing to come halfway round the world to see this triploid cross between the allotetraploid *P. andersonii*, (*P. munitum* x *kwakiutlii*), back with *munitum*! Of course questions were flying as to Mr.

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Building a Fern Table

by *Richie Steffen*

Several years ago a good friend of mine introduced me to one of the Pacific Northwest's horticultural icons, Nancy Davison Short the former Northwest garden editor for *Sunset Magazine*. Nancy created a diverse and rich landscape in her Hunts Point home near Seattle, Washington. While touring her garden I was drawn to one of its most unique features, the fern table. The



Richie Steffen teaching a fern table making class.



table was a sturdy structure about two feet high and the size of a rather large dining table (3 feet by 9 feet). The surface was covered with an esthetically pleasing arrangement of rocks and moss with thoughtfully placed perennials and slow growing shrubs, but the crowning glory was a choice selection of exceptional ferns. The soft textures and flowing forms tied the table top garden into the surrounding space. Nancy gave credit for this creation to a dear friend

of hers George Schenk. George is a former nursery owner and well known author with a passion and love for plants and a keen ability to use them in extraordinary ways. Inspired by this duo I tried my hand at making my own fern tables and the experience has created an inspiring dimension to my garden work.

Selection of Materials

The Table

Be creative when thinking about a fern table. It could be as simple as a very sturdy metal outdoor table or as elaborate as a huge smooth slate slab, perched on carved stone legs. The important point is that you need enough flat surface to add soil, plants and stone and not have it dry out too quickly in summer. I find that I need at least a two foot by two foot flat surface. If you go larger it is best to place the table where you want it before planting; these things become quite heavy very quickly. I would also recommend that you try to keep the width no more the three and half feet. This will allow you to easily reach the center of the table for watering, weeding and replacing plants in the future. For a small table I have used 24 x 24 inch high strength concrete pavers placed on top of concrete blocks or terracotta chimney liners. Although they are still heavy they can be easily taken apart and moved if necessary.

Soil

It is important to have a soil that is both moisture retentive, but will be course enough for air the reach the roots. A basic mix that I have use with good success is:

2 parts coarse compost

1 part medium to fine bark

1 part coarse sand

1 to 2 parts pea gravel

This mix has a more natural look than commercial mixes with pumice or perlite. I find that nothing destroys a nature planting more than seeing perlite floating around on the surface. If you must use a commercial mix, use one that contains pumice. It is less noticeable in the finished table.

Stone and Wood

To create a natural and flowing feel I always add a selection of stones and often interesting bits of wood. This is a chance for creativity to take over. If you feel a little unartistic here are a few suggestions that will help tie it together.

1. I always use local stone and wood. I will often rob bits from other areas in the garden. I think this will help the table relate to its surrounding space.
2. Have all the stone or wood be of the same type. This will lend a continuity to the table. If each piece of stone or wood has a different color and texture it is almost impossible to make it look cohesive with a mixture of plants as well.
3. Look for weathered wood. I will add rotting and overly weathered wood to give an appearance of age. I try to make the table look like a slice of the forest has been lifted and placed there for your viewing pleasure.
4. Look for character in the pieces. Although, you do not want each piece to be filled with character one or two pieces will lend interest. A section of heavily knotted rotting log mixed with a more mundane section of rotted log makes the eye focus on the interesting form presented. A prominently placed unusually shaped stone mixed with others of the same color and texture will achieve similar results.
5. Place the rocks or wood in groups of odd numbers, starting with the largest and most interesting pieces. Keep in mind that generally speaking at least one third of the each piece will be buried in soil as it is placed.

Plants

I choose medium to small ferns (maturing under 12 inches tall) for this planting. It is best to have good hardy choices. The roots will be subjected to colder and warmer temperatures than if they were planted into the ground. The ferns are the main focus, but I like to accentuate them with dwarf shrubs and low tight growing perennials. It is a good time to visit your specialty nurseries. Dwarf rhododendrons and azaleas can add evergreen foliage and flowers to the mix. Small pots of shade tolerant dwarf conifers have also worked out

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Building a Fern Table - *continued*

well. The plethora of tiny and dense hemlock cultivars seem like they are begging to be added to a fern table. Nancy Davison Short's table features *Microbiota decussata*, and Russian cypress, which cascades over the side. I am sure a local alpine grower could suggest many choice additions. I have also found the fern tables to be an outlet for my obsession with mini hostas. These tough little plants make the perfect complement for the ferns.

Putting it All Together

Once the table is in place on a flat level area it can be planted. I start with placing the largest and most dramatic pieces of stone and wood on the table surface. Keep in mind that the soil in the center of the table will end up at least 8 inches deep and up to 12 inches deep. The stones or wood may need to be placed on a shallow bed of soil to be seen. If the table is small (2 to 3 feet) I will also place stones and small pieces of wood along the edges to act as a border to keep soil from washing off the sides when watering. Once a few major pieces are placed I will spread a shallow layer of soil over the table and add the two or three focal point plants. At this point you should have the general framework of the planting. I would then alternate between smaller stone, wood and plants until everything is planted. To finish off the table I will often cover the remaining soil with moss. I would strongly encourage you to collect moss from your own garden. Mosses collected from native areas often will not survive and can deplete wild populations. Mosses from your own garden are much more likely to thrive in the planting. It is important to cover much of the soil surface; if not with moss, you can use gravel. This helps hold the soil in place until the plants' roots can bind it all together. Once the planting is finished and the remaining soil is covered give it a gentle slow watering making sure that the plants and soil have settled in.

Care and Management

Watering

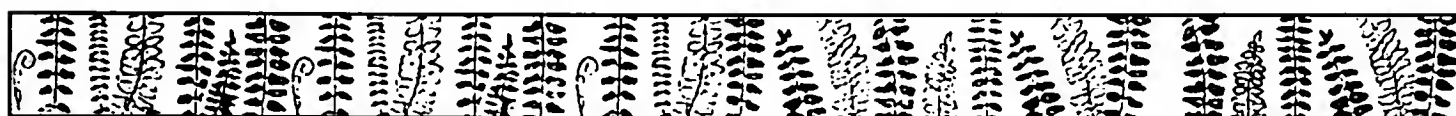
Watering will be the most critical aspect for a successful fern table. During the growing season it will need to be checked daily. If the surface is dry water gently. If the table does dry out it is important to give it several gentle waterings to make sure the soil has rehydrated. Poke your finger into the planting to make sure the water has penetrated and is not just running off. Excess water will naturally drain off the edges of the table.

Pests and Diseases

By choosing sturdy reliable plants you can eliminate dealing with many pests or diseases. The biggest problem I have had to deal with are slugs and occasionally aphids. Slugs can easily be taken care of through the discreet use of baits on the table and by scattering baits around the base and surrounding garden. Aphids seem to only be a problem for a short period in the spring. When noticed, I use an appropriate insecticide and spot spray the plant. Refrain from spraying the entire table it is easy to damage the new fronds emerging and can kill beneficial predators hiding in the miniature landscape.

Refreshing the Table

Over time you will notice some plants not doing well and other doing too well. Do not be afraid to remove these underachievers and thugs and put others in their place. Take a look at the composition of the planting in the spring and move around anything that seems out of place. It is also a good time to add more plants to fill in gaps or add seasonal interest or to divide successful groundcovers on other areas on the table. Fern tables are a fun and eye catching addition to the garden and well worth trying. Once you do one it is hard to not do more!



Second notice

- HFF/BPS tour of the Southwest - October 2007

A complete itinerary for this tour was published in the HFF Fall Quarterly and the response has been most enthusiastic. (If you missed or misplaced it and would like the full schedule please e-mail Sue Olsen at Foliageg@juno.com for a copy.)

Schedule -

Oct. 2 – arrive Dallas

Oct. 3 - Tours - garden of Ruth Dynbort, Dallas Arboretum and Botanical Garden, Casa Flora wholesale nursery. Wine and cocktails at the home of Wim and Naud Burnett followed by dinner at an authentic Tex-Mex restaurant.

Oct. 4 - Garden tour at Judy Caughlin's; to Ft. Worth and B.R.I.T. and their horticultural library and herbarium; tour of the Ft. Worth Botanical Garden and dinner on our own at the sumptuous Gaylord Texas Hotel.

Oct. 5 - Native ferns at Tyler State Park; proceed to Hot Springs, Arkansas to the Galvan Arboretum with 52 different fern species.

Oct. 6 - Ouachita National Park with varied habitats and ferns especially those of wetlands.

Oct. 7 - Nacogdoches via Caddo Lake with its primeval forest and Cypress trees with Spanish Moss and "Cypress knee" growths. In Nacogdoches tour the Mast Botanical Gardens at Stephen Austin University.

Oct. 8 - Several options including a likely visit to a tropical fern collector followed by a visit to the Mercer Arboretum

Oct. 9 - Zilker Botanical Garden in Austin for lots of Marsilea. As a change from ferns the hotel for the evening overlooks a bridge the underside of which is home to a million and a half Mexican bats. They will fly out to greet us in the evening!

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HFF/BPS Tour of the Southwest - *continued*

Oct. 10 - Private gardens, native plants and a visit to a staghorn enthusiast for dinner and ferning

Oct. 11 - San Antonio Botanical Garden, in the lovely city of San Antonio; Riverwalk near the Alamo and optional riverboat cruise.

Oct. 12 - Enchanted Rock Mountain for native rock plants, Big Bend National Park in the Trans-Pecos portion of the Chihuahua Desert. Abundant stands of xerics at 8,000' here (cool temps) and a complimentary copy of a book on the Trans-Pecos.

Oct. 13 and 14 - Cat Tail Falls and Fort Davis area in the Davis Mountains a high rainfall area that should be full of ferns and wildflowers; Alpine herbarium in Sul Ross University; a native plant nursery; Mysterious Marfa lights and Ft. Davis and McDonald observatories for viewing outer space.

Oct. 15 - Return to Dallas with a stop at Monahan Sand Dunes State Park. Farewell dinner; sharing and fond goodbyes.

This tour features a great variety of habitats, private and public gardens, interesting local sites and a vast expanse of a vast state. Organizer Naud Burnett has put in many hours arranging an outstanding itinerary. To sign up please e-mail your intentions to Naud@naudburnett.com, call him at (214) 528-9014 or write to him at P.O. Box 41140, Dallas, TX 75214. More details and costs should be available in February and will be sent to those who have indicated an interest. Space is limited to 30 and there are over 20 tentative reservations so far. See you there!



HFF/BPS Gems of Germany Tour *continued from pg. 15*

Thiemann's method of creating these hybrids. He began by sowing the spores of *P. aculeatum* with *P. setiferum*. Out of 100 plants ten were *P. x bicknelli*. He now sows each species separately and then pairs up the gametophytes. He finds that 20-30 pairs will yield 2 to 3 hybrids.

We were able to see his spore growing area, which is located on shelves at the base of the "Rapunzel" staircase. Mr. Thiemann mentioned using basaltic dust in a layer on the top of the sowing medium that is microwaved.

The trip back up the hill seemed a breeze as we all chattered about the beauty of our last stop. We headed for Köln for our final evening together. Thanks and presentations were made to our tour leaders. Berndt Peters was our patient tour organizer, host, and solver of all problems. We are all so fortunate he took this on and gave us such a magnificent and memorable tour. Fay Mandt, our tour translator, was presented with a giant bouquet and heartfelt thanks for her irrepressible Irish humor. And I can't imagine ever wanting to traverse German roads without the mind-boggling expertise and kind attentions of Berndt, our bus driver. We all have lots of work to catch up to the gardens and collections that were so graciously opened to us.

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